

HARADA et al. -- 10/776,452
Attorney Docket: 071469-0307698

IN THE CLAIMS:

This listing of the claims replaces all previous versions and listings of the claims.

1. (Currently amended) A method of automatically configuring an Advanced Process Control (APC) system for a semiconductor manufacturing environment comprising:
generating an auto-configuration script for executing an auto-configuration program, wherein said auto-configuration script activates default values for input to said auto-configuration program; ~~and~~
executing said auto-configuration script to generate an enabled parameter file output from said auto-configuration program, wherein said enabled parameter file identifies parameters for statistical process control (SPC) chart generation; and
generating control limits for at least one of said at least one SPC charts, wherein said generating comprises automatic calculation of said control limits per the execution of said auto-configuration script.
2. (Original) The method as recited in claim 1 further comprising:
generating an auto-configuration data file configured to be read by said auto-configuration program, wherein said auto-configuration data file comprises at least one of a list of enabled parameters and flags for overriding said default values.
3. (Original) The method as recited in claim 1 further comprising:
generating at least one SPC chart for at least one of said enabled parameters, wherein said generating comprises automatic creation of said SPC chart per the execution of said auto-configuration script.
4. (Canceled)
5. (Currently Amended) The method as recited in ~~claim 4~~ claim 1, wherein said control limits comprise at least one of an upper control limit and a lower control limit.
6. (Currently Amended) The method as recited in ~~claim 4~~ claim 1, wherein said control limits are automatically calculated once a required number of data points are achieved in said SPC chart.

HARADA et al. — 10/776,452
Attorney Docket: 071469-0307698

7. (Original) The method as recited in claim 6, wherein outliers of said required number of data points are removed.
8. (Original) The method as recited in claim 6, wherein said control limits are calculated based upon a percentage of a mean of said required number of data points in said SPC chart.
9. (Original) The method as recited in claim 6, wherein said control limits are calculated based upon a multiplication of a factor and a standard deviation of said required number of data points in said SPC chart.
10. (Original) The method as recited in claim 8, wherein said upper control limit (UCL) is determined by $UCL = \text{mean} + \text{percentage} * \text{mean}$, and said lower control limit (LCL) is determined by $LCL = \text{mean} - \text{percentage} * \text{mean}$.
11. (Original) The method as recited in claim 9, wherein said upper control limit (UCL) is determined by $UCL = \text{mean} + \text{factor} * \text{standard deviation}$, and said lower control limit (LCL) is determined by $LCL = \text{mean} - \text{factor} * \text{standard deviation}$.
12. (Original) The method as recited in claim 10, wherein said percentage is user specified.
13. (Original) The method as recited in claim 12, wherein said percentage is specified using a spreadsheet.
14. (Original) The method as recited in claim 12, wherein said percentage is specified using a GUI.
15. (Original) The method as recited in claim 11, wherein said factor is user specified.
16. (Original) The method as recited in claim 15, wherein said factor is specified using a spreadsheet.

HARADA et al. — 10/776,452
Attorney Docket: 071469-0307698

17. (Original) The method as recited in claim 15, wherein said factor is specified using a GUI.
18. (Original) The method as recited in claim 6, wherein said required number of data points is user specified.
19. (Original) The method as recited in claim 18, wherein said required number of data points is specified using a spreadsheet.
20. (Original) The method as recited in claim 18, wherein said required number of data points is specified using a GUI.
21. (Previously Presented) The method as recited in claim 6, wherein said required number of data points comprises a number of data points acquired during a pre-population of the APC system.
22. (Previously Presented) The method as recited in 9, further comprising:
configuring run rule evaluations for said at least one SPC chart; and
enabling said run rule evaluations.
23. (Original) The method as recited in claim 22, wherein said run rule evaluations are configured by a user.
24. (Original) The method as recited in claim 23, wherein said factor is specified using a spreadsheet.
25. (Original) The method as recited in claim 23, wherein said factor is specified using a GUI.
26. (Original) The method as recited in claim 6, wherein said automatically calculated control limits are determined for a current substrate run and are utilized to update old control limits from a prior substrate run.

HARADA et al. -- 10/776,452
Attorney Docket: 071469-0307698

27. (Original) The method as recited in claim 26, wherein a new control limit is equivalent to $(1-\lambda)*\text{said old value} + \lambda *(\text{said calculated value})$, said λ is a filter constant and ranges from a value of 0 to 1.

28. (Original) The method as recited in claim 10, wherein said determined upper control limit (UCL) is determined for a current substrate run and is utilized to update an old upper control limit from a prior substrate run.

29. (Original) The method as recited in claim 11, wherein said determined upper control limit (UCL) is determined for a current substrate run and is utilized to update an old upper control limit from a prior substrate run.

30. (Original) The method as recited in claim 28, wherein a new upper control limit is equivalent to $(1-\lambda)*\text{said old upper control limit} + \lambda *(\text{said determined upper control limit})$, said λ is a filter constant and ranges from a value of 0 to 1.

31. (Original) The method as recited in claim 29, wherein a new upper control limit is equivalent to $(1-\lambda)*\text{said old upper control limit} + \lambda *(\text{said determined upper control limit})$, said λ is a filter constant and ranges from a value of 0 to 1.

32. (Original) The method as recited in claim 10, wherein said determined lower control limit (LCL) is determined for a current substrate run and is utilized to update an old lower control limit from a prior substrate run.

33. (Original) The method as recited in claim 11, wherein said determined lower control limit (LCL) is determined for a current substrate run and is utilized to update an old lower control limit from a prior substrate run.

34. (Original) The method as recited in claim 32, wherein a new lower control limit is equivalent to $(1-\lambda)*\text{said old lower control limit} + \lambda *(\text{said determined lower control limit})$, said λ is a filter constant and ranges from a value of 0 to 1.

HARADA et al. — 10/776,452
Attorney Docket: 071469-0307698

35. (Original) The method as recited in claim 33, wherein a new lower control limit is equivalent to $(1 - \lambda) * \text{said old lower control limit} + \lambda * (\text{said determined lower control limit})$, said λ is a filter constant and ranges from a value of 0 to 1.
36. (Original) The method as recited in claim 3, wherein said at least one SPC chart is accessible remotely via the Internet.
37. (Currently Amended) The method as recited in ~~claim 4~~ claim 1, wherein said control limits are accessible via the Internet.